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Calumet Smoke, Wampum Beads, and Bird Quills: The Meanings and Materials Used by Natives in Economic Interactions with Europeans in Colonial America

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Abstract

Not all post contact culture change among the northeastern woodland Native Americans derived from materials or behaviors introduced by Europeans. Some traditional elements of native society were altered for use in new contexts, as was the case with the use of the calumet pipe. A related phenomenon, the use of wampum, is believed to have developed into the complex of patterns with which we are familiar only during the period 1600-1610, and aspects of this new entity are believed to have derived from traditional quillwork-weaving. More significantly, the cognitive aspects of wampum exchange are believed to parallel elements in calumet ceremonialism. The symbols involved in the formal process of smoking the calumet and in wampum exchange, and the functions of both rituals, demonstrate the importance of both activities in socio-political networks during the Colonial period. These processes are examples of a culturally universal mechanism that must exist in order to mediate economic relationships between egalitarian and complex societies.

Introduction

Similarities among various elements of different cultures sharing a "culture area" (Kroeber 1939) do not surprise even the most casual student of anthropology. A knowledge of the shared subsystems of a group of proximal societies, however, may be useful in enabling us to understand how such individual cultural systems can develop effective relationships with an entirely new set of cultures while maintaining the integrity of their own specific lifeways. A specific area that we may examine as a case in point covers the Northeast Woodlands. Here we note large numbers of hunting and gathering cultures, including some with horticulture, each of which developed complex interactions with a wide range of Europeans who came to explore, exploit, and settle their area of its New World.

Many of northeast woodland peoples developed and shared sets of interaction patterns that permitted intercultural dealings with other Native American peoples as well as European groups. Specifically, the shared behaviors most important to these interactions are the cognitive parallels that can be found within the calumet "ceremony," the exchange of arrows as gifts, and the formal presentation of wampum. These patterns developed after contact, or by about 1650 CE, as a response to the economics of the pelt trade. Aspects of each of these patterns continued to evolve throughout the colonial period. Vestiges of these cognitively equivalent systems survive to the present.

The approach used in this study focuses on the ways in which wampum belts and strings were used, and how these uses developed within a limited area of the Northeast to enhance and expand the dynamics of the more ancient and more widespread calumet rituals. By examining aspects of the material goods essential to these rituals, particularly those aspects involving the use of bird quills, we are transforming the traditional material culture studies of the early 20th century. This new course (cf. Appadurai 1987) examines aspects of materials, and how they are used, to infer cognitive and social behaviors. When I began to organize the information for this paper in the 1970s material culture studies had long been in decline. Until recently there was surprisingly little attention directed to the ways in which culture is translated into material goods (but, see Hall and Gunn 1977). The "rebirth" of these dynamic aspects of material culture (e.g., Appadurai 1986) provides a better approach to the interpretation of meanings embedded within the objects created by native peoples.

Native American Pipes

Several customs related to pipes and ritual smoking have been of interest to Europeans since the period of early contact. Formal or academic studies of these phenomena have been made for more than a century (McGuire 1899). Springer's 1981 study of Native American smoking behaviors, in both "secular and ritual" contexts, is particularly focused on those that relate to intertribal treaties, or meetings for trade or other exchanges. The earliest direct account of calumet ritual appears during the period 1665-7 among the Illinois, a subject that we will consider in detail below. I suspect that earlier evidence for this ritual exists although the earliest known first hand description is this from the 1660s. Fenton (1953) had suggested that the Eagle Dance was an offshoot of the calumet ceremony, but Springer (1981:218) sees the use of eagle feathers developing in a course parallel to the evolution of the calumet ritual. I suspect that both are evolved versions of pre-Contact rituals that enabled tribal groups to meet in contexts needed for trade without fear of generating hostilities.

Springer examines the four material elements that are parts of the ritual smoking complex: "tobacco, kinnikkinnik, pipe stems, and pipe bowls." His research collected specific details relating to each of these elements and he then elaborates on the ways that they were integrated. Of particular importance is that the stem and the bowl of the pipe were separately maintained (Springer 1981:221), a feature that may relate to Hall's (1977) suggestion that the calumet can be equated with weapons (cf. Becker 2000b). Possibly only the pipe bowl had a connotation of weaponry, but stems appear to me to have been decorated like some Plains Indian war lances. The separate maintenance of the stem and bowl also suggest possible moiety interaction, with one moiety responsible for each of the two major elements of the calumet (see Becker 1975).

Calumet pipe stems were commonly carved, and/or decorated with various elements that may have had specific meanings. Commonly used as decorations were eagle and other feathers, the skins of birds such as duck and woodpecker, and also painted designs or painted zones. Springer (1981:220, 222) does not mention the quillwork commonly found on calumet stems despite the fact that the colors and designs worked into these aspects of calumet decoration are commonly fundamental to the ornamentation and often the principal surviving element. The beauty of these calumets as well as their presentation at meetings and gatherings involving "trade" with natives and Europeans alike has led to numerous examples being distributed in museums all over North America as well as in numerous European collections it.[1]

Springer (1981:222) recognized the calumet as "a seal or memorial to an agreement of peace and friendship and [that it] could even be presented to a newly encountered group as a sign of peaceful intentions." But he places emphasis on the dance linkage while missing the function of these items in inter-cultural activities and trade, as well as the parallels with wampum use among the Five Nations Iroquois and their neighbors.

Springer (1981) specifically notes the vast range of uses for tobacco in various contexts, and that the list of all "appropriate references, would run to many pages." Heiser's (1992) notes on possible sources for tobacco in the prehistoric period in the eastern areas raise interesting issues regarding production and distri-

bution of the basic agent that was smoked in these pipes. Of particular note here is Morgan's (1851:164) observation that by "burning tobacco they could send up their petitions with its ascending incense, to the Great Spirit" (Springer 1981:219).

An overview of the calumet ceremony has been well described elsewhere (see Hall 1977), and is popularly known as a means by which the sharing of a "peace pipe" promotes or reaffirms friendly, or at least neutral, interaction between the members of different cultures. J. Paper (1988, also 1987) inventories 196 pipes in 19 major museum collections, but his exploration of the relationship between pipes, smoking rituals, and native cosmology imbue these secular objects with politically correct "sacred" attributes. Robert L. Hall (1977) presents a careful review of the origins of calumet symbolism and discusses the cognitive aspects of relationships between arrows as gifts and the later use of gifts of tobacco that was to be ritually smoked in a calumet.[2]

The relationship between the pipe bowl and the separate stem, generally considered as a "calumet" despite the etiological origins of the term, have been compared with the relationship between male and female, and with the sky-earth (god-human) dyad (Furst and Furst 1982:170-172). One may consider, however, two features that provide a different explication for the use of calumet ceremonialism. Aspects of the calumet ritual have extensive links with other traditional elements of the cultures involved, suggesting that these behaviors may be no more than amplifications of existing patterns.

The focus of this paper is the exploration of several related symbolic interaction patterns associated with calumet ritual and wampum prestation, both of which facilitated intercultural dealings in the early historic period. These patterns, noted above, involve intercultural pipe smoking, arrow exchange, wampum presentations (see Foster 1984), or any combination of these three. Inasmuch as pipe-smoking rituals are relatively familiar this paper will treat only those aspects which demonstrate the linkages between "gifts" of arrows and the calumet ceremony, and also will demonstrate a further link between pipe smoking and wampum.

Porcupine Quills

Many of the numerous published descriptions of Native American quillwork do not specify if the ethnographic piece employs flattened porcupine quills or spline-like sections cut from bird quills (see Fletcher 1910). In the early 17th century Sagard (1632) specifically noted that the Huron objects that he described were ornamented with porcupine quills. His specificity may have been a function of the French language, but also may suggest that Sagard recognized a cognitive difference in the sources of the materials used.

American porcupines are any of the relatively large (ca. one meter long, including the tail) quill-bearing rodents (order *Rodentia*) of the family *Erethizontidae*. All of the New World species are arboreal. *Erethizon dorsatum*, the typical North American species, occupied the wooded areas from Canada down to northern Mexico, as shown on Orchard's (1916:PL. II) distribution map. Orchard's map also delineates the areas of the high plains down through Oklahoma that are beyond the range of the porcupine, but where many of the cultures traded for quills or made expeditions to secure them. The quills of *Erethizon dorsatum* are modified hairs in the form of barbed spines sometimes as long as 8 cm. The quills tend to be white, with the area of the barbed tip generally black. Porcupine quills can be easily flattened, facilitated by wetting them and heating the pressing tool. The product is very thin, flexible, and smooth edged.

Porcupine quill decorated objects were commonly made by most if not all Native American peoples. The plains dwelling peoples beyond the range of the porcupine provided a constant market, receiving quills as part of the complex trade systems that extended back into antiquity. Farabee (1921:251) notes that many peoples of the southern Plains, such as the Apache, Comanche, Kiowa, and Wichita, did not do quillwork. Kinietz (1965) specifically describes some "porcupine quill work" made by the Miami, noting that the quills themselves had come in trade from the Potawatomies and Ottawa. "Quills were never used in their natural round state nor were they split, as is the method used with bird quills, but they were flattened as needed ..." (Farabee 1921:250).

Robin Odle (1973) provides an excellent review of the techniques used to dye and work porcupine quills. The "weaving" of these quills can employ a bow loom (Roth 1916, 1919:13; Odle 1973:XXXV; see also No. 12 on p. 6), a technique that I believe was later employed to produce wampum belts. Grinnell (1962, I:147, 159-167) provides important information on quill work among the Cheyenne, with particular emphasis on female quilling societies and their rituals. The special symbolism embedded in these societies, their formation and their legends (Grinnell 1962, II:385-391) provide clues regarding beliefs among Late Woodland period peoples in the northeast. Of note in Grinnell's work is the absence of any reference to bird quills, and the general lack of information on the specifics of quilling (see Grinnell 1962, II:59, 65-66). A number of early 20th-century descriptions of quilled artifacts specify that these are porcupine quills. Skinner's (1920) description of a Peoria [Illinois area] necklace is but one example. Farabee, writing at a time when material culture studies focused on detailed observations rather than theoretical meanings, specified the decorative uses of porcupine quills among the Hidatsa, Cree, and others. Farabee (1921:250) describes the process from capturing the porcupine, through the sorting of spines by size and length, to dying and storage in small cases made of elk or bison bladders. Natural white quills were commonly used for borders as well as designs.

A number of different techniques for using porcupine quills in the production of decorative bands and other ornaments are reviewed by Orchard (1916). He also describes a number of tools used for flattening the quills. Other aspects of preparation, including the dying process, also may have important cognitive significance but that line of research will not be pursued here. Orchard (1916) shows that long, flattened quills could be sewn directly to a leather surface, with the threads creasing the quills where they cross over them to hold them in place. Van Stone (1987) suggests that a technique for fine loom weaving of quills was perfected among the Cree in the northwest of Canada, but many variations are well known among the Iroquois and other peoples of the northeast. Thus porcupine quills provide a source of malleable and easily dyed units of a relatively standard size that became a basic material used for ornamentation (see Merwin 1918).

The use of moose hair for embroidery is a closely related technology. Moose hair ornamentation may be a post-Contact development (Odle 1973:XXXVI; Turner 1955 [1976]), and its decorative and conceptual relationships with porcupine and bird quill decorative systems merits its own study.

Bird Quills

My discovery of the occasional use of bird quills as ornamental elements on Native American artifacts led to this enquiry into "meaning." Bird quills cannot be easily flattened, and splitting long strips from them for decorative purposes usually produces thick units with rough edges that are easily recognized. Orchard (1916:42-43) notes the (occasional?) use of split bird

quills as a filler material around which porcupine quills were wrapped. He does not comment on possible symbolism involved in this selection, and possibly the bird quills used in these contexts had purely functional value. Roth (1919:12) notes extensive European use of goose quills for decoration as part of the folk art of the Tyrol. In the New World where bird quills are used as ornaments commonly there is no attempt to dye them. The natural color generally is a dull pearly white, but natural tan and brown shades are known. The possibility that green dyes were used has been suggested (Louis Casagrande, personal communication). The coarse edges and limited ability to take dyes are limitations that counterbalance the potential for creating longer strips from bird quills. Since bird quills are more rigid and highly resistant to dyes their use may be concentrated in contexts where porcupine quills are not traded, such as among some Inuit groups (Orchard 1916), or elsewhere where specific symbolic functions are intended.

Given the differences in the properties between porcupine and bird quills I was surprised when I found any objects decorated with bird quills that had been made by peoples living in areas where porcupines and their quills commonly are available. Only recently has a specific article addressed the use of feather shafts for the purpose of creating a "quilled" design (Feder 1987).

In studying various ethnographic objects in European museum collections (Becker 1994, 1997) and their analogues in American collections, such as at the American Museum of Natural History, I noted that bird quills appear in some unexpected contexts. Native peoples living in areas also inhabited by porcupines had ready access to the quills of these animals. The various unusual items on which bird quill decorations appear would themselves suggest that there are special reasons for incorporating bird quills as part of the ornamentation system. Bird quills are incorporated into a "turban" said to have belonged to Flat Mouth, a Sisseton (Eastern Sioux) "chief" from Flandrean, South Dakota (Odle 1973:64). This "turban," number 263 in the exhibit, is made of matted bison wool that is decorated with a weasel skin, trade ribbon, and rawhide loops that have been wrapped with bird quills (from the Chandler-Pohrt Collection, #2814, dated to ca. 1840).

An interesting piece from Point Barrow, Alaska in the Newark Museum (Cat No. 38.66) is a swan's foot embroidered with white reindeer hair and red wool, trimmed with white seed beads around the top. The reverse is not illustrated but is said to have a geometric design with an "overlay of two crossed bird quills" (Lipton 1977:48; see also MacGregor 1983:129-130).

Examples of Native American artifacts decorated, or marked by the use of bird quills are housed in many ethnographic collections, but very few have been published (e.g. Harrington 1920). Odle's section (1973:XXXI-XXXVIII) on quill and moosehair work from the area of the Great Lakes region generally distinguishes porcupine quillwork from bird quilled items (except #4). Odle (1973:XXXVIII) includes only one object (number 9 on p. 5) that has bird (gull?) quills incorporated into the decorations. Odle (1973:6) illustrates a porcupine quill-work shoulder strap dating from ca. 1800 that looks remarkably like a wampum belt. The belt is ca. 90 cm long by ca. 6.5 cm wide (Wisconsin State Historical Society 1954.2021-2), and is associated with a ca. 1820 knife sheath ca. 24 cm long. These pieces, collected by James Duane Doty, are attributed to the Chippewa, but may have been made by the Sauk and Fox. The bird quill work on the belt led Odle (1973:XXXVIII and 5) to suggest that it may have served as a "protective amulet on the warpath."

Numerous functional straps for pouches, knife sheaths, and other artifacts were made by various native peoples incorporating elaborate beadwork decorations that superficially resemble wampum. However, shell beads are very rarely found in the decorations on these straps, just as glass beads are rarely found incorporated in wampum belts. I suspect that the ornamental quillwork handle on the swan's wing fan held by the half-Cree Cun-ne-wa-bum ("One that looks at the stars") depicted in the 1847 painting by Paul Kane (Toronto Museum, see Kane 1971) is not porcupine as often suggested, but bird quills.

The relationship between quills and wampum is nowhere as strongly suggested as in the weaving technique for porcupine quills called "network" or "web-work." The primary difference is that the "bead" units in the "network" run parallel to the long axis of the piece, and not perpendicular as is the case with wampum belts. The "network" technique is seen on a shoulder strap dating from ca. 1800 that is in the Milwaukee Public Museum (Cat. No. 30435/7322: see Odle 1973:6, XXXVII). The band on this example is over 54 inches (135 cm) long and 1 7/8 inches (4.8 cm) wide and appears to be decorated with porcupine quills. However, a related artifact (Odle 1973:XXXVIII) is noted as decorated with bird quills. The "network" technique produces quilled designs that strongly resemble later wampum belt patterns. This may be coincidental since the individual beads in a wampum belt generally are perpendicular to the long axis, while quill units in the "network" pattern extend parallel to the long axis. A number of Mi'kmaq examples of porcupine quillwork look remarkably like wampum belts (see Whitehead 1982).

An Ojibwa (?) man's trade-wool shirt 76 cm long, with silk ribbon trim is in the Bishop Whipple School Collection (Minneapolis Museum of Science BWSC-A79:4:156, Display No. 36) is believed to date from ca. 1850 (Odle 1973). The large decorative band of bird quills extending across the back of the shirt is believed to be earlier, possibly dating from 1830 or before. The front of the shirt is ornamented with four pieces that appear to have been cut from the same long band, and all four pieces may have come from the same unit that decorates its back. Such ornamental and/or magical bands or strips were fastened to garments, often reused or traded to other peoples. The use of bird quills in this example, however, suggests to me a specific function. I believe that the use of bird quills as part of an ornamental system reflects a special meaning associated with the object.

One of the two shirts in the Spagni collection in Reggio Emilia, Italy has elements that may provide clues to the "meaning" of bird quills in these contexts. The style of this shirt (No. 112) is similar to those believed to have been worn by a few high ranking warriors of the hanskaska (Chiefs Society) of the Oglala (Laurencich-Minelli 1990:192, 202, Fig. 10; cf. Taylor 1989:246). While the sleeves and shoulders are decorated with porcupine quills, the "shoulders have bird quills in the typical parallel quick technique characteristic of this type of work." The porcupine quills are described as yellow in color, while the bird quills are said to be orange, white and pale blue (caption, Fig. 12) and the text (192) notes yellow green, orange and brown birdquills. The beadwork on this shirt, believed to be early 19th century, is "more typical of the eastern bands of Sioux, such as Yankton and Yanktonai." Colin Taylor (Laurencich-Minelli 1990:202, n. 8) notes that the bird quillwork pieces "may have been cut from something else, possibly a legging." Taylor believes the bird quillwork to be "rather firmly associated with the Santee Sioux as well as the Fort Bertold area" (see Feder 1987:52). To Taylor, the neck flap seems like "Western Sioux (Lakota) shirts" and provides examples.

Other examples of bird quill decorated items may have been published but without recognizing that the decorative elements did not include porcupine quills. Overlooking the presence of these bird quill units may miss the most symbolic aspects of

these artifacts. The scalp in the British Museum ethnographic collections (Ethno Q78Am39) has been painted red and is noted as decorated with quills and split roots (King 1982:82, Fig. 87 top left). I believe that these are bird quills and that this is an important feature of this object. Note that the "Q" in the catalogue number reflects a "query" as the original documentation for this piece has been lost.

Studies of ethnographic pieces on which porcupine quills are specified are paralleled by the more interesting study of a "bird-quill belt" (Harrington 1920). Harrington describes this belt as made from buffalo hide ornamented with colored bird quills, while noting that examples of any artifacts decorated with bird quills are rare. Although Claudia Medoff (personal communication, 6 March 1981) believes that artifacts ornamented with bird quills are not as rare as Harrington suggests, there is no specific study to support her belief. Bird quilled artifacts are distinct from the numerous artifacts decorated with porcupine quills.

Of interest to me is the association of the belt described by Harrington as part of a war bundle of the Sauk and Fox in Oklahoma. The native ascription of much of the magic as being associated with a bunch of feathers attached to the belt, but hanging down like a tail, reinforces the idea that the bird-quills used on the belt have special meaning (see also Harrington 1914:198). The common assumption that all the quills used for decoration derive from porcupines blurs our understanding of the extent to which bird quills were used. Lyford (1940:41) suggests that among the Western Sioux that porcupine quill work, of a highly sophisticated level, was the forerunner of bead worked items. When beads began to be traded in large numbers they rapidly replaced quills as ornamental elements. This shift also may reflect the disruption in traditional native trade that was essential to getting porcupine quills to the peoples on the Plains. Lyford (Ibid.:42) states that "[v]ery rarely, split bird quills were substituted for those of the porcupine." I suspect that his perception of the rarity of bird quilled objects is accurate, but that the use of bird quills reflects a culturally significant meaning and not a simple "substitution" of one material for another.

Arrow Exchange, Atlatl's, and Calumet Stems: The "Weapons" Connection

In many of his works Robert L. Hall (e.g. 1977:503) has noted the 16th-century use of arrows by Native Americans as gifts. In the absence of other goods an exchange of arrows provided ritual sharing whereby both parties act in a neutral context to exchange arrows, a category of materials that both produce. Stone axes are exchanged in other parts of the world by peoples who both make and use these axes, revealing that no material need is satisfied by the exchange. Thus the "ritual" must serve a function other than what would be considered trade, or procurement of needed goods. Arrow or other exchanges set up the framework for meetings between groups that otherwise might not be friendly. These meetings are essential to the maintenance of the extensive and complex trade systems. Thus during one of the earliest trading expeditions into the Delaware Bay and River de Vries reported that he was "given" beaver skins (Myers 1912:20). After European contacts, the many animal pelts that had been a waste product among the natives of this region become useful objects that could be "given" to Europeans with the expectation of an appropriate return gift (prestation and reciprocity, or gift exchange).

In his important article of 25 years ago, Hall (1977:503) drew connections between the calumet ceremony and the exchange of weapons, drawing a relationship between pipes, arrows, and clubs. Hall (1977:Fig.2a, 2b) depicts two atlatls and compares them with a Hopewell period "ritual" pipe in the shape of an atlatl. Hall completes the comparison (Ibid.:Fig.2c) with an illustration of an historic period Iowa stone pipe bowl with a wrapped flat stem. Not discussed by Hall is the fact that atlatls were still in use during the Hopewell period, as the earliest bow use in the New World may be ca. 700 CE, and in the area east of the Mississippi the transition may be closer to 1000 CE. How long after bows came in the atlatl also was used is not known, but I suspect that the form of the atlatl seems to have continued in the shape of the ritual calumet.

Hall (Ibid) also discussed tobacco smoke as being emitted from the body, like nasal drippings, saliva and other body materials that to me represented the "giving" of ones self (see below, under "myths"). Thus Hall points out the Southeastern myth of the "Beadspitter" who impregnates the mother of the Hero Twins. The Iroquois analogy is impregnation by a pair of arrows. Arrows and pipes are both male fertility symbols (as are clubs, etc.). For a woman in various cultures, just touching a pipe, or sleeping near arrows, as well as a number of analogous behaviors are sufficient to cause pregnancy. The external form of pipes and the passage for smoke is a particularly powerful symbol. The smoke itself has particular qualities.

Examining arrow exchange, the behavior for which we have the least information (see Hall 1977), one should note that the feathers (fletching) on an arrow have restricted function and often are more significant as a decorative attribute (see Becker 1981). The feathers also relate arrows to birds, and like birds arrows fly through the air (the celestial or spirit realm). Therefore the feathers cognitively relate these arrows, which are terrestrial beings or objects which are not capable of self flight, to birds which fly by means of being feathered. The feathering or wing symbolism permits these beings to become spirits, or capable of passage through the air (into the non-terrestrial sphere). Arrows, like birds, can relate human beings with the spirit world (see Figure 1). Originally, the only direct evidence for relating arrows and wampum derived from Hall's (1977) evidence, and inferred cognitive similarities. George Hamell (Ms.:2), in studying Iroquoian creation mythologies and linguistic evidence, suggests that wampum (*migis*) in the Great Lakes region is associated with Sun rays, arrows, procreation, and "life essence." One may note (see Figure 1) that the Sun's rays fall from heaven, as does wampum from the wampum bird and other objects temporarily aloft.

Calumets

The calumet pipe is a specific type of smoking pipe used in rituals to establish relationships between a specific host group of Native Americans and any individual or group of outsiders. Guests could be other Native Americans or any of the colonial European populations. The Calumet Dance, its distribution and related rituals, are summarized by Springer (1981:221-228), who notes that it was first described by Jesuits among the Illinois in the period 1665-1667. This late date in the colonial period suggests a late development of this ritual. Elaborate pipe bowls may be a late development of an ancient tradition.

Springer indicates that the first description of the calumet ritual dates from the 1660s while Shea (1852:35) attributes the earliest account to the Marquette record from 1673 (see also Rau 1882). In addition to the archaeological evidence for earlier use of ritual calumets we have some earlier accounts of the presentation of pipes, but without the descriptions of any associated rituals. In 1608 Captain John Smith (1910:29) described gifts from the Susquehannock of three foot long pipes and the accompanying bags. The archaeological evidence from the Susquehannock sites suggests that they made clay pipes and crudely carved stone pipes until the Washington Borough period, ca. 1600-1625 (Kent 1984:145-156). During the very period of their contact with John Smith they were developing carving

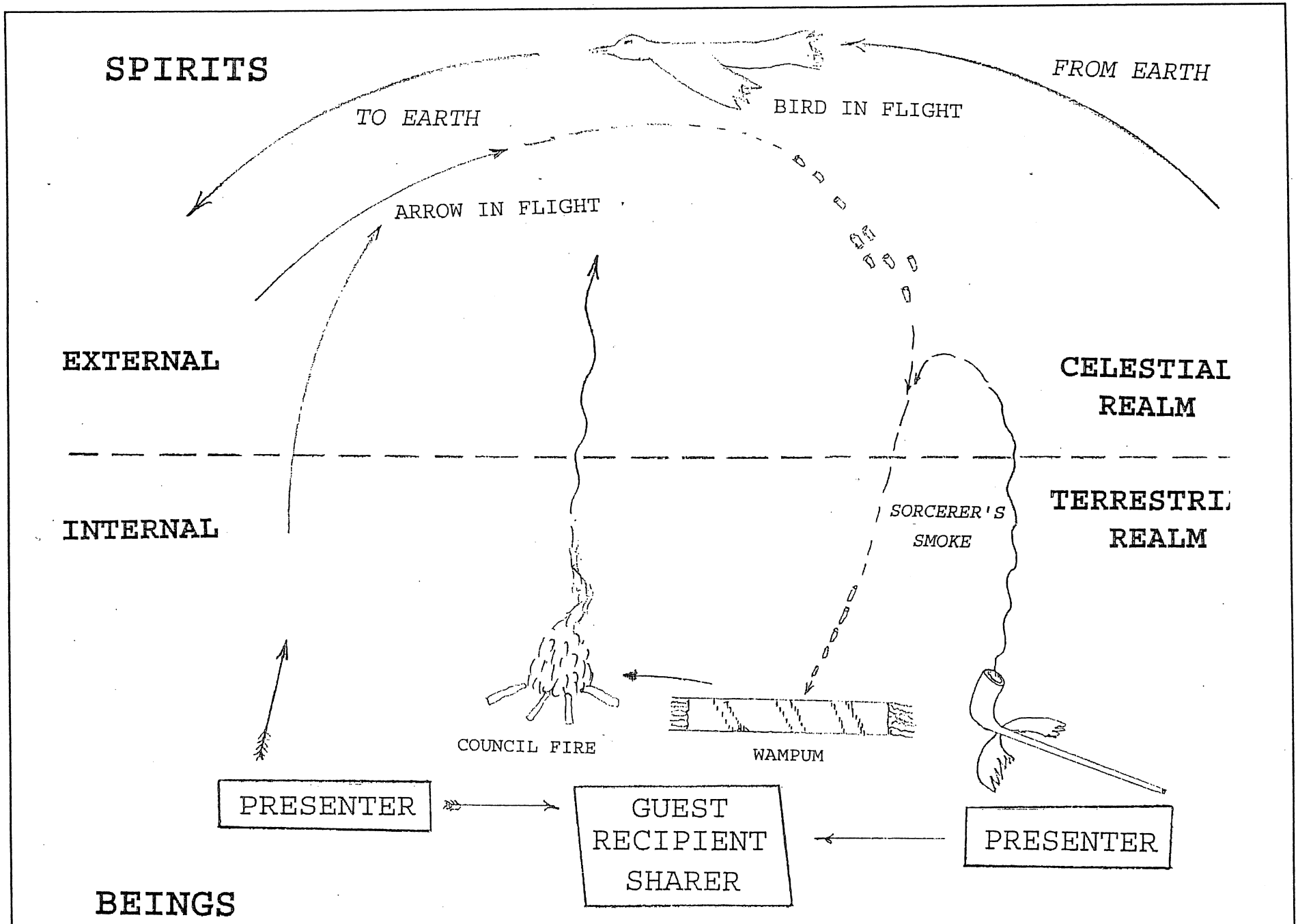

Figure 1. A series of interactions in which the participants share a behavior in the presence of the spirits, who ratify and oversee their mutual obligations.

techniques, or importing better carved pipe bowls. The long pipes given to Smith, and frequently depicted in that region (cf. Lindeström 1925), probably were variants of calumets and may have been transferred to Smith in the course of an elaborate ritual that simply is not noted in his brief account.

The Calumet Dance: The Significance of the Ritual

Most commonly what is identified as the calumet ritual involves a specific dance that has been given the same name. Charlevoix's (1923:63-66) account of the calumet dance from the early 1700s, curiously separated from his discussions of calumets themselves (pp. 304-307), provides some important insights into function and meaning. Charlevoix (1923:63) specifies that "the two nations entertained us ... with the dance of the Calumet." Therefore, this ritual was not solely between a host tribe and the French, but was a part of a meeting between two native nations at which these French may have been incidental guests. More significantly Charlevoix goes on to note that "This is properly a military festival." A few pages later he notes that the meeting had to do with peace and alliance. Taken together these indicate that the "war" or military moiety from these two cultures, also responsible for all external affairs including trade (see Becker 1975) conducted this ritual. I would predict that among the Five Nations Iroquois that members of the "war" or external affairs moiety would be responsible for presenting, receiving, and curating wampum belts.

At the end of the 17th century even among the Five Nations Iroquois where wampum was the principal medium by which treaty negotiations were conducted, calumets also were important. I suspect that the calumets may have been held by and used in internal affairs among the Five Nations, although the precise lineages of pipe "owners" needs to be determined. Toward the end of the 17th century Lahontan reported (in Thwaites 1905:58) that the five "cantons" of the Iroquois had an annual gathering to smoke the great Calumet. The ritual appears to have been part of maintaining their mutual peace and thus had a "Sacred" peacetime function (Lahontan 1905:508-509, but also with the calumet in hand these people could go safely on their voyages beyond their home territories (pp. 75-77)). The use of the calumet in the calumet dance as well as in war is noted (Lahontan 1905:423-424).

Lahontan described the pipes [bowls] as being of different colors, but "The red Calumets are most esteem'd." He includes the oservation that these pipes were trimmed with "yellow, white, and green" feathers. Like Charlevoix, Lahontan (1905:83-84, 168-169, 175) discussed the artifacts themselves separately from the dance ritual. Lahontan (1905:402) notes that the name "calumet" is what the French called the pipe [or its shaft], as derived from the Norman *chalumeau*, while the Iroquois called it *ganondaoe* and other natives used the term *poagan*.

For my linkage between calumets and wampum belts as modes of negotiating interactions between traditionally hostile groups Lahontan offers another important observation. Lahontan (1905:189) recognized that there were geographical limits within which the calumet and its rituals were used "for the Gnachtares are not acquainted with that Symbol of Concord." Unfortunately the Gnachtares, who seem to be the same people as the Gnacsitare Indians who were allied with the Essanapes Indians, are not here identified. I infer that the Gnachtares were neighbors of the Five Nations or at least lived in the greater northeast.

The Feather Trade

Feathers were a pre-contact trade item that traveled over the extensive North American exchange routes. The importance of these trade items is seldom recognized as they rarely are recovered from archaeological sites outside the American southwest. The trade in colored and elaborate feathers certainly predates the pelt trade, but was not replaced when the value of pelts soared after 1500 CE. The red and green feathers seen on many artifacts made by the Illinois and other cultures in the American Midwest may derive from local or from migratory fowl. However, I suspect that some of these feathers may have originated in Central America and come up via extensions of the exchange routes that brought macaw and parrot feathers to the Puebloan peoples (cf. Rau 1882; Becker 2000c). In addition to the need for a comprehensive catalogue and study of calumet stems we need detailed studies of the feather ornaments found on these objects.[3]

The role of the calumet ritual in trade, and related cognitive components of the "ceremony," can be used to link the calumet with aspects of wampum use. In this review the goal is to demonstrate the widespread linkage of wampum, and the wampum bird, with pipes and their attached bird "ornaments." "The association of pipes and tobacco with birds, particularly the eagle and the mythical Thunderbird" (Springer 1981:229) now can be extended to include wampum and its constellation of "meanings." Archaeological evidence for thunderbirds can be found in a number of contexts (e.g. Becker 1992), and may provide a further linkage between wampum and the wampum bird.

1. Archaeology

Although the elaborate wooden stems or "tubes" of ancient calumets, as well as any complex ornamentation that may have been on them, do not survive from archaeological contexts, the stone bowls are widely known. Brown (1989) traces the spread of the calumet ceremony through the archaeological distribution of catlinite pipe bowls. He interprets the archaeological evidence to suggest that the calumet ceremony first appeared during the middle 16th century in the Upper Mississippi Valley and Great Lakes area and spread throughout the lower Mississippi by 1600 CE. The origins and spread of the calumet ceremony as depicted by Brown do seem to follow the course of European trade, but possibly following ancient trade routes that happened to be used by Europeans.

While the use of catlinite pipe bowls is easily documented in the archaeological record, examples of "the highly decorated stem" (Brown 1989:312) that was essential to the ritual are less well known from early dates. Brown (1989:311) suggests that French exploration spread the calumet ceremony, but clearly the ceremonial aspects developed as a function of a need to mediate cultural interactions essential to trade, as best documented by Springer (1981). The actual presence of the French was incidental to the trade, and Brown may be correct in documenting the "ritual" as early as 1550 when the pelt trade had already extended across eastern North America to the center of the Great Plains. Brown (1989:313) correctly notes that an this early period actual smoking was "not a prime feature in these accounts" of ritualized meetings.

Most pipe bowls were carved from varieties of steatite, with the red "catlinite" being one of the preferred types. The possible relationship between pipe bowls of steatite and some bannerstones carved for use on atlatls (e.g. Becker 1988) may be coincidental, but should be considered. Gunderson et al. (2002) note 51 archaeological examples of stone pipes from the area of old Mobile, Alabama. Of these 35 are the complex Catlinite generally associated with pipe bowls, but 11 are simple Kansas pipestone, four are an unprovenanced talc (steatite), and one was made from chlorite.

A flat based steatite pipe dated from before 1400 CE was recovered from the Island Field site in central Delaware (Custer et al. 1990:23, Figs. 14 and 15). The mouthpiece end of the plat-

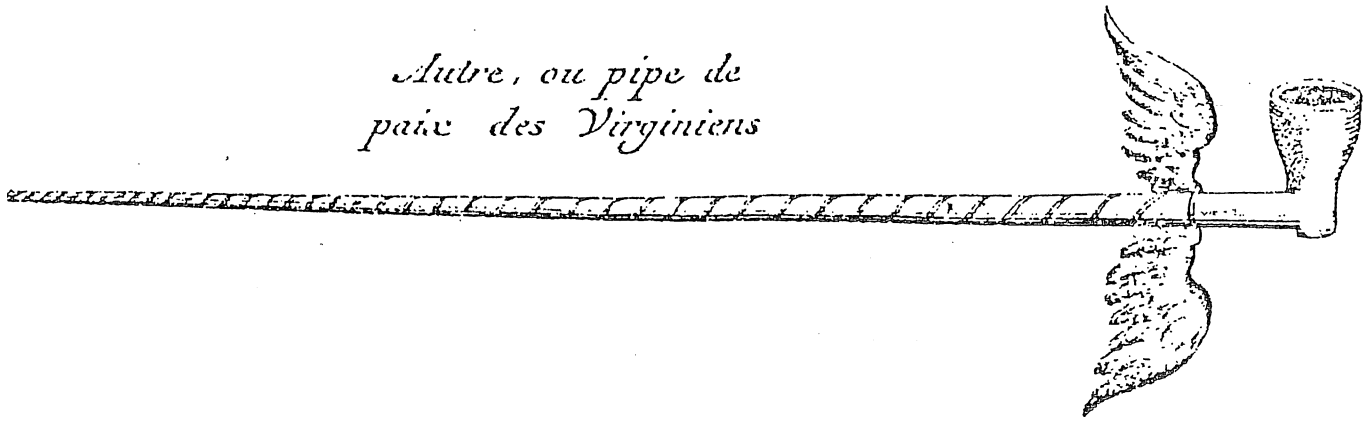

Figure 2. Illustration of a "peace pipe" of the Virginians with wings attached, after Bacqueville 1722a [1753] and Moubach 1728:fac. pg. 67).

form has the constricted shape commonly found on wooden shafts of pipe stems dated from the 16th century and beyond. An interesting archaeological piece dated to the "Emergent Woodland" (800-1000 CE); (Koldehoff et al. 1996; also Koldehoff 1996) is a "bird pipe" with a unique engraved surface possibly representing the folded wings of a bird. Various minor attempts to trace the recent evolution of calumet pipes, again focus almost entirely on the stone bowls (Paper 1986; also Witthoft 1949).

The longs stems of calumets commonly are decorated with feathers, often including pairs of bird wings (see Figure 2). Bird skins and other avian ornamentation also was common (see Springer 1981:220-221). A Dakota pipe stem of the 19th century is reported to be ornamented with wisps of hair (Maximilian 1976:20) rather than feathers, possibly reflecting a regional variation. Springer (1981:222) specifies that the calumet stem would be "decorated with eagle feathers and the skins of ducks and woodpeckers." In addition to serving a decorative function these feathers on pipes also reflect the relationship between the smoker and the cosmic (or spirit) world. The cosmic relationship parallels that of the arrow, or possibly only the fletching on the arrow. In both cases the feathers serve to aid the flight to, or through the heavens.

During this research I often asked "which way does a winged pipe fly?" In general the feathers and wing pairs are mounted on the stem in a fashion indicating that the pipe is "flying" in the direction of its "head" or bowl (cf. Paper 1988:ii). However, this is not a perfectly uniform arrangement of the feathers. Perhaps the earliest drawing of a calumet, or a straight pipe variation, was made by Father Hennepin during the course of his explorations in the area of the Great Lakes and upper Mississippi in 1679-1680 (Heiman 1960:16). This example depicts the wings indicating the direction of flight was toward the mouthpiece. This may have been an error, but note should be made that the handle ends of clubs often have designs carved that resemble birds' heads.

2. Historical Contexts

Native American pipes and pipe smoking are well documented from 19th-century contexts in the northeast as well as from among Plains Indians. A late 18th-century account from the Ohio territory is also important in demonstrating the range of distribution (Loskiel 1794:X, 156). A century ago Fletcher (1904) discussed the unity of various aspects of the Pawnee Calument Ceremony. Of special note is an account by the Oglala named Black Elk that had been recorded originally by Joseph Epes Brown (Black Elk 1953, Drysdale 1982). Several important earlier accounts are now known. The distribution of the ritual appears to have covered all of eastern North America, and as noted above it served as a means of facilitating intertribal communication and trade, and later the trade with Europeans. The calumet ceremony is described by a number of early party reports from 25 July 1687 when they stayed at Otsotchoiue, one of the four villages of the Accancea people. Joutel (1962) says that they saw these people "sing and dance the Calumet, or Pipe." Confusion in reporting or dating this account of the La Salle expedition may be why Gundersen et al. (2002) believe that the Joutel description refers to a 1699 context at Fort Maurepas, present Mobile, Alabama.

The elaborate feather work, commonly including entire sets of wings, that adorn the stems of calumets is rarely preserved in museums or in private collections. Two striking calumet stems collected by George Catlin and now in the collections of the University Museum of Archaeology and Anthropology are scheduled to be exhibited at the Smithsonian American Art Museum from Sept. 2002 until January 2003. One of these stems (45-15-1453) has unusually fine quillwork as well as the remnants of iridescent green feathers attached at the mouthpiece area. The primary observation made about this stem is the fine quality of the quillwork, exceeding anything that I have ever seen. Thus reports that a pipe might take a year to make can be readily understood. Orchard (1916:PL. XVI) illustrates a stem with similarly ultra-fine quillwork, but does not discuss that example or even note which technique was used to fashion the impressive decoration.

The second pipe stem collected by Catlin and to be displayed (45-15-1459) has extremely fine quillwork, but does not equal that found on the other example. The feather traces on this second stem appear both in the middle as well as at mouthpiece, where they clearly extended beyond the present blunt end. Since these feathers were attached in a fashion that covered the mouthpiece end of the stem and extended out in the direction of the smoker, an extension or additional element would have been needed to smoke the pipe. Perhaps a special tube or other item needed to smoke was carried separately or individually by participants in the calumet ritual.

Many excellent illustrations of calumets are available. For example, a watercolor by a member of the Watson family was included with John Fanning Watson's manuscript (see in Wolf

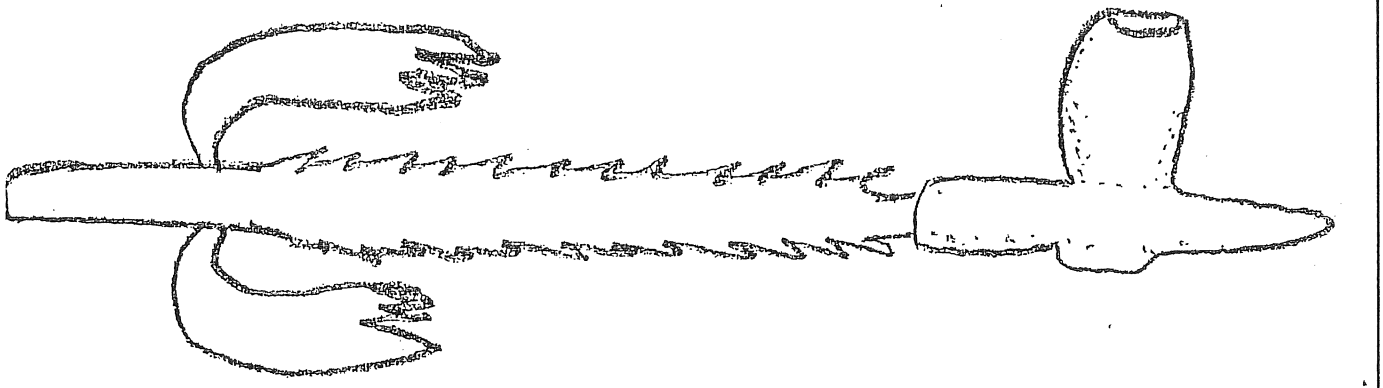

Figure 3. A schematic of an early drawing of a calumet shown with wings backward.

1975:21) depicts a "chief" with calumet, and a pipe with feathers is described in relationship to the Treaty at Fort Stanwix in 1759 (Wolf 1975:55). By the 1760s various British Peace Medals and silver gorgets (neck pendant) presented as gifts to Native American allies in Pennsylvania and perhaps elsewhere depict calumets, but "wings" representing the actual wings and feather ornaments essential to these objects are rarely depicted on medals (Figure 3). A pair of wings decorates the "peace" pipe shown with an Indian and Colonist (William Penn?) depicted on a sterling gorget made by the famous silversmith Joseph Richardson ca. 1757 (collections of the Historical Society of Pennsylvania). As Arthur Einhorn points out (personal communication 2004), the "peace" medal cut by Edward Duffield and struck ca. 1756 by the noted Philadelphia Clockmaker Joseph Richardson is unusual in having feathers depicted as affixed to the pipe. Fales (1974:140-141, Figure 124, left) provides an excellent description of this 1.75 inch diameter item struck for The Friendly Association of Regaining and Preserving Peace with Indians by Pacific Measures. Their interest in a peaceful resolution to the conflicts that were then erupting into the French and Indian War led them have this medal made. A man in colonial garb, sitting under a tree facing a seated native, points to the sun with a pipe. He holds a winged pipe, which looks like the type of ceramic pipe used in the 1750s, by the mouth end.

This medal appears to be a prototype of the much later examples that are commonly described as "peace medals" and most commonly are associated with presidents such as George Washington. Richardson "made thousands of silver objects for presentation to the Indians" (Ibid.:141, 298, n. 61), including arm bands, earbobs, rings, etc. (see Becker 1992). A presentation gorget made by Richardson ca. 1760, also presented "to the Indians by The Friendly Association" (Fales 1974:142, Figure 125) carries exactly the same scene that is on the earlier medal. The peace medals that became so common after 1789, including one made by Joseph Richardson, Jr., are noted for their peace pipes to which no wings or other ornaments are attached (see also Gillingham 1936; Prucha 1971).

The complex symbolism of the calumet and its many cultural relationships have been discussed in a recent work by Hall (1997), but without reviewing the historical development of this subject. Numbers of outstanding examples of calumets with intact ornamentation survive from as early as the 1830s, with two collections being particularly important. Some of the calumet stems from the George Catlin collection, much of which now is at the British Museum (Ewers 1979), and a collection in Italy (Laurencich-Minelli 1990, esp. Figures 1-4) are noteworthy for the preservation of their original elaborate featherwork ornamentation (cf. the University Museum collection of Catlin artifacts).

Ewers (1979:30-33, 38-48, etc.) offers useful illustrations and commentary on the elaborately decorated stems of the Catlin collected calumets, many of which have unusually fine quillwork. However, even where the documentation survives, as in the examples published in these two collections, there remains considerable disagreement regarding the actual identity of the makers (Laurencich-Minelli 1990:191, 202 note 2; see also Ewers 1979:13; Ewers 1986:99-101). Calumets, like ornamental quilled bands, also may have been widely traded and even produced as items specifically to be exchanged with neighboring tribes. Here it is important to note Catlin's observation (Ewers 1979:48) regarding how the Cheyenne *Nee-hee-o-woo-tis* (the Wolf on the Hill) came to own a Sioux pipe. Of particular note is that the quilled ornamentation was done by his wife, who had spent "more than a year dressing the stem."

The pelt trade, which I believe to be the basis for the connection between wampum rituals and the calumet dance, appears most clearly in an account of the Arkansas Calumet Dance witnessed by the members of La Salle's last expedition to America (1687-89) and presented by Henri Joutel, historian of the expedition. Joutel's important account (Margry 1878, 3:444-447) has been translated and reported in full by Springer (1981:224), who describes the details:

> Friday the 25th the old men [of the Arkansas] assembled and sent word to the man named Couture, who was our interpreter, that they were planning to dance the calumet, seeing that the other villages had performed the dance for M. de la Salle and M. de Tonty during their discovery [of the Lower Mississippi]. They were the only ones, they said, who hadn't performed for the French, because they were located inland, and the French had only visited those villages located on the Colbert River [i.e., the Mississippi]. The chief's suggestion certainly had no other purpose than the obtaining of guns, since they observed that they were the only ones without guns. The result was that, the said Couture having brought the message, M. Cavelier accepted their invitation, seeing that we needed them to provide some men and a canoe to transport us. After receiving our response, the natives assembled and came to the house with some buffalo robes which they spread out on the ground, then they beckoned to M. Cavelier. They led him ceremoniously to the said place and made him sit down. They made us sit also and began to sing after their fashion. The women came too. They arranged themselves behind the

men and sang according to the same rhythm. The calumet was placed on two forked sticks, as I have described for another tribe. There were some who carried otter skins to honor the calumet, which was decorated with feathers of different colors. Finally they sang at the top of their voices. But the fortunate thing was that M. Cavelier was not as bothered as he had been at the other village, where one man had rocked him from behind and two girls had placed themselves at his sides. Nonetheless, since by afternoon the gentleman had become tired of listening to them yell and being exposed to the sun (despite their having put some skins above his head), he told them he was going to have his nephew (the young M. Cavelier) take his place. They said that was fine and they continued to sing until the next day. Some of them were so hoarse they could hardly speak.

When the sun had risen a little, they carried in a sort of post which they set upright in the ground. The said Couture told us that their intention was to strike the post while reciting the feats of bravery which they had performed in war. After that they threw at the foot of the post some pelts, and normally to people of the tribe to whom they give the calumet respond by putting some articles of merchandise at the foot of the said post, and take what had been originally placed there. It was, indeed, a sort of disguised and haphazard trade. I had heard this custom described to the late M. de la Salle. But since we did not have a load of goods and had no use for their pelts, not having any way to carry them, we had [Couture] tell them that they would have to wait for our return, when we would have a large amount of merchandise, and that they we would strike the post. Their ceremony over, the natives took the calumet, in which they put tobacco, and presented it to M. Cavelier, who had been summoned and returned to his place; after which they made each of us smoke, that is those who were smokers. I gave them some bits of tobacco from France, or rather from the [Caribbean] Islands, to honor their calumet. They smoked it, after which they took the said calumet, put it into a deerskin case with the sticks which supported it, and came to present it to M. Cavelier, along with some otter [skins] and some porcelain collars [wampum], which are made of certain shells that they get from other tribes that are said to be near New England. They brought all of this to our house. We gave them a gun, two axes, six knives, a hundred charges of powder and ball; and some beads and rings for the women. They left very satisfied (Springer 1981:224, his trans. from Margry 1878:444-447).

The Calumet ritual as reported by Joutel (see Springer 1981:231, n. 2), includes the setting up of a post in the ground that was struck "while reciting the feats of bravery that they had performed in war." This recitation reflects the origins of the later well-known Sun Dance ritual, thus linking a number of cultural features of peoples on the Plains. Of particular note is that after the Calumet Ritual was performed and "the said calumet ... put it into a deerskin case with the sticks which supported it," there was a presentation of other skins as well as "some porcelain collars." Once again a link between the calumet ritual and wampum presentation can be noted, and in this case the use of wampum is documented from a location beyond the Mississippi.

Foster (1977) discusses the rituals involved in the use of the calumet (cf. Black Elk 1953) and refers to the multiple "channels" of communication which had to be opened between the smoking participants (see also Foster 1984, etc.). The symbolism as Foster has determined it to be, is not interchangeable with the use of wampum belts, but the two reinforce the relationship that the participants seek to develop. Feathers, in the form of bird-wing brushes, often appear in northeastern contexts where wampum is the mechanism commonly used to facilitate transactions. An example from 1755 can be seen in the speech of the Lenopi from New Jersey named Teedyuscung acting as the speaker for a delegation of his kin supposedly living in the Forks of Delaware. Referring to the State House in Philadelphia in which the meeting took place, he noted:

> We sit in Council swept and cleaned out, I have, therefore brought this small Wing with me to sweep clean the House (Colonial Records of Penna. VI:360).

There was more complex meaning in this "ritual" at a meeting in July of 1758. Teedyuscung and his kin, who had recently "joined" with the French against the British, had returned to the British side. Lt. Gov. William Denny met with this "leader" of these Lenopi, then "settled" in the area of Wyoming on the Susquehanna, and Teedyuscung delivered the following speech:

> Here I stand in Our House. Our Forefathers have pitched upon this House and held it in good Councils. I brought the same wing with me that they used. It is yet in my hand, in order to sweep our House. When our Grandfathers used to hold Council in this House they kept it clean. It is but of late that it has been made dirty. I now with this Wing remove all of the Filthiness and dirt out of it. I throw it out before the wind. [presents 4 strings of wampum] Brothers: After I have swept this House clean with the Wing and I and my Brothers sit, it puts me in mind of our Forefathers and my Brother William Penn, they used to hold good Councils here [presentation of many strings and belts ...] (Hazard 1853, Ser. I:vol. 3:458).

During this period of time Teedyuscung was well known to the English colonial leaders, who noted that he was unfamiliar with the protocols of native diplomacy. We do not know if Teedyuscung was learning these formalities from the Six Nations, in whose orbit he then was operating, or if he was learning them directly from the Pennsylvania colonial government. Comparison may be made with the statement made by Kanaghquiesa, an Oneida elder, who spoke at Fort Johnson on Monday, 16 February 1756:

> As this is the Council Room where all the affairs of the Six Nations are transacted, and as you told us you would keep a white Wing hanging in it to sweep it clean with, we now take this Fan down and sweep all dust and dirt out of it, so as nothing may interrupt us in our councils and deliberations (O'Callaghan 1855, VII:53).

Similarities between calumet rituals and wampum exchange have been noted previously (e.g., Fenton 1971:455) but no cognitive parallels had been drawn. Where the smoke generated equally by those attending such a "treaty" (meeting) flies through the air (arrow-like) to the gods, the tangible wampum belt serves as a graphic aid, and quasi-amulet, to commemorate the event. Possession of the belt obligates the recipient to reciprocate by giving aid, acting as a neutral agent, or otherwise being of help to the belt giver. The acceptance of the belt may be postulated to signal a willingness on the part of the receiver to cooperate. E. Tooker (personal communication) suggests that among the Iroquois the deliverance of wampum simply attested "to the validity (truth) of the statement" which went with it. Tooker suggests that the statement made by the giver may create an obligation but that the belt would not. The symbolic or ritual act of smoking or giving and receiving of the pipe (or wampum) appears to me to be an essential aspect of this interaction, as a handshake would be between other peoples sealing a "contract." The Council Fire, with its smoke going up to the spirits, as well

as the tree of life with branches reaching into the spirit realm are transformations of this basic concept.

Pipes — Wampum — Clubs — Feathers

The obvious link in the relationship between pipe smoking and birds, noted above, also is indicated by the use of wings and feathers to decorate pipes. Modern studies of the calumet ceremony alone include Blakeslee's (1981) important review and Hall's study of the evolution of the pipes in which he presents the cognitive links between the calumet and various weapons such as the atlatl and arrows (Hall 1983:38; cf. Becker 1998, 1990, 2000b, also 1985). I believe that the "feathers" used to fletch arrows and to decorate clubs are the central feature of this linkage. Witthoft (1949:58-59), following Fenton (1953) was the first to relate the pipe smoking part of the calumet ritual to the Eagle Dance by equating the calumet stem with the Eagle Dance wand (cf. Becker 2000b). For the Eagle Dance and its relationship to the Calumet Ceremony see Fenton's (1953) work and Singer (1981:228).

Pipe bowls in the shape of clubs also appear, such as the example collected by George Catlin now in the collections of the University Museum in Philadelphia (Cat. No. 38,380); (see Ewers 1979:24, also 13 Fig. 5 and 30, Plate 30 No. "o"). The production of metal tomahawk-pipes for trade was one of the more clever aspects of European commercial enterprise that Ewers (1979:10, also 19) believes began in "colonial times" (see also West 1970:315).

More significant is Hall's (1987) expansion on the link between the calumet ceremony and mourning rituals as well as the mechanisms of inter-tribal trade. The parallel with the use of wampum in "condolence" activities and in inter-tribal dealings is evident at every point in the ritual. I believe that the basic theme or element in this ritual is "transition," as in life to death or one culture to another. Rebirth through new kinship may be another transition; an idea that looks at Hall's (1987) important point that the calumet ritual was used to establish fictive kinship, a shared bond that is essential to inter-tribal trade and that I also relate to the rituals involved in wampum exchange.

Some thirty years ago the investigations of the complex cognitive relationships among wampum, bird quills, and tobacco were hampered by a lack of interest in evaluating the specific integrated elements in "Woodland Indian" culture. George West's opus (1934) emphasizes stone and metal bowls, almost completely ignoring the elaborate stems and complex decorations that accompanied the pipes and were essential to the calumet ritual.

Recent studies of tobacco use by Native Americans (see in Winter 2000) are more aware of the smoking of tobacco as the critical factor in cultural "sharing." Recently authors rarely describe the impressive wooden shafts and elaborate decorations that are essential features on calumets (Du Ponceau 1834:134; also Wood 1870, II:684). The term "calumet" derives from the French, and specifically refers to the elaborate and usually winged shafts that rarely are found in modern museum collections.

The bright red variety of "pipestone" comes from a single quarry near the present town of Pipestone, Minnesota, now within Pipestone National Monument. In 1836 George Catlin visited this location at Côteau des prairies, near the source of the St. Peters River. Although he was not the first European to see this geological wonder, Catlin's art and his lucid description led the mineral quarried there to be named for him (Ewers 1979:26). Catlinite as well as other steatites and related pipestones were commonly used to fashion the calumet bowl (see Gunderson 1993, also Brown 1989). The composition of each of these stone bowls can be identified, or "sourced." Emphasis on stone bowls is enhanced by the considerable numbers of archaeological examples, but the lack of preservation of perishable aspects in museum collections as well as in the ground detracts from comparative studies that extend to other artifact categories, such as wampum.

One further linkage has been suggested between smoke and wampum. Hall (1977) suggested that calumets and weapons, or what Springer (1981:220-221) describes as the "hatchet-pipe combination," were symbolically related (cf. Becker 1998, 2000a, 2000b). Springer (1981:221) also points out that Fletcher (1904:20-21) had earlier noted that the feathered stems used in the Pawnee Hako Ceremony were fletched like arrows, as were the pipes or calumets in other cultures. Hall (1977:502) describes the calumet as "ritual wampum." Hamell (1979) also relates the ball headed clubs of the 17th century and beyond to Iroquoian smoking pipes. Note that the "handle" ends of many Native American clubs are carved to represent the head of a bird, with a hole for adding a thong appearing in the position of the eye of the bird (e.g. the British Museum club Ethno Q82Am806).

A Chippewa black stone pipe bowl from ca. 1850 is carved in the shape of a ball-headed club (Odle 1973:24). Thus pipe shape and design may be reflected in this category of clubs and one might understand why cylindrical wampum rather than flat pieces of bone were used to decorate one such club that at present is in England (Becker 1980). When interactions such as wampum exchange or calumet smoking take place between non-kin the lack of shared understanding regarding what would be implied reciprocity (which would exist in a kinship situation within a culture) can be handled by such compensatory acts of gift giving. The "return gift" in such cases needs to be specified (neutrality, aid, friendship, etc.), but the nature of the exchange is made clear. Today a contract between literate people would state the terms of the "bargain" as effects each party. Although this paper is concerned with various symbolic aspects, those fundamental mechanisms of gift exchange (or trade, among non-kin) appear to apply in the cases of wampum presentation, and may be taken as a model for a kind of cultural process.

Hiawatha and Wampum: Cognitive Parallels in Mythology

A number of native tales and legends from the northeast describe various cognitive relationships between particular raptors and wampum beads. Wonderly's (2001) review of "The Iroquois Story Over Time" includes no references to wampum. Other presentations of various Iroquoian creation legend incorporate some reference to wampum and several contexts can be listed from the early accounts. The many versions of the Iroquoian creation legend vary among the Six Nations, as well as in neighboring cultures. The first version to have been recorded may appear in the diary of a Captain Pouchot, a French officer commanding Fort Levis on an island in the St. Lawrence near Ogdensburg, New York. Over several years in the early 18th century Pouchot interviewed Onondagas living at Father Pickett's mission at Oswegatchie, now Ogdensburg. According to A. Einhorn (1976) the diary was captured by Lord Amherst in 1760, and has been examined by Franklin Hough (see 1880:13-14), but a thorough search might turn up important early information. Hough published dozens of works using original documents and records, from Nantucket across to the Great Lakes, but his efforts have been almost completely ignored. Whatever Pouchot recorded from various Onondaga regarding Hiawatha and the creation legend, it predates by nearly a century the data that Joshua Clark had gathered from the Onondaga, which appears to have been published by Hough (1880:13-14) as well as passed to Schoolcraft (1847). Longfellow bunched all of the

traditions of which he was aware into one "tale" that bears little resemblance to any of the originals. Longfellow may have had more influence on the modern "Indian" authored versions of the Hiawatha legend than any of their native ancestors. The Seth Newhouse version has been the subject of discussions by a number of scholars, such as Thomas R. Henry, Paul Wallace, and also William N. Fenton.

J. N. B. Hewett, in his introduction to the important account transcribed by John Deserontyon notes that:

> The authentic traditional account of the founding of the League shows that in the days of Deganawida and Hiawatha the quills of feathers and the twigs of the elderberry bushes, cut to suitable lengths and strung, were employed as are wampum strings in modern times (Hewett, in Deserontyon 1928:93).

The legend of the wampum eagle suggests that white wampum is the equivalent of eagle feathers (Beauchamp 1892:63-64; Parker 1916:75-76, 1923:32, 194, 198). The possibility that short lengths of eagle quills were used as beads prior to the development of wampum in the 16th century should be considered.

The interrelationships between wampum, pipes (smoke), and feathers are easily seen in the legends of various native American people. The League of the Iroquois, generally associated with Hiawatha as a founder figure, probably derives from the socio-economic stimulus of the fur trade between 1575 and 1600 (see Fenton 1971:440). Springer (1981:223) notes that the Calumet "dance was a facilitator of trade" and cites important early accounts from the Plains area that describe rituals and events that are parallel to those used in the east. Quite logically one would expect the founder or prime mover in the political amalgamation that became the League of the Iroquois, if it relates to or derives from the stimulus of trade, to be related to an economic cognate (the wampum bird), as noted above. This relationship reflects the economics of the trade, the binding of the league, and the rituals important in dealing with foreign groups (both other native Americans and European).

Increasing trade after 1550 also generated increased potential for cultural conflict, which in turn required new means of forming or solidifying alliances. These cultural needs for altered modes of inter-tribal exchange paralleled the need for new means by which Europeans of various cultural traditions could be brought into this social as well as economic network. In fact, the trade itself may have caused less integrated bands to develop into more consolidated "tribal" entities. Thus, a study of calumet rituals, and its symbolism, provides us with one means of examining these interactions. Whether or not this aspect of culture change, which appears to have been rapid, reflects an attempt at revitalization or simply indicates adjustments to more complex external affairs brought about by a vastly expanded trade net resulting from European interactions is a subject which merits our attention.

Fenton (1971:440-441) provides a brief summary of myths relating to the origins of wampum. Here only a few examples need be given to illustrate the relationships among the various elements incorporated into these myths. Among the Wawenock of Maine, one of the Abenaki groups, the legend exists of a sorcerer who could produce wampum. When the sorcerer lighted his pipe (puffed on it) the act would cause wampum to fall from his mouth (Speck 1919:9). One may assume that this reflects a simple transformation of smoke into wampum. This also is reciprocal to the transformation of wampum into smoke. Wampum can be used as a mechanism by which beings can effect cures through the ritual interaction with spirits utilizing these beads (see Snyderman 1961:576), presumably by burning them.

In Penobscot legends the culture hero owns a bird which throws off wampum from its plumage whenever it shakes itself (Speck 1919:7-8). Here the association is with the bird's feathers (quills?) and wampum. This Penobscot hero is like Hiawatha (or Hayentwatha), the Iroquois hero who is related to the fabulous wampum bird, and I now believe this version was borrowed by the Penobscot only in the late 19th century. Parker (1968:116) records an Onondaga version of the foundation tale in which ducks on a lake take flight at the arrival of Hayentwatha. So rapid is their action that the water of the lake is lifted with them. This both enables Hayentwatha to cross a dry surface and to discover piles of shells on the lake bottom, which he gathers and strings.

The linkage between Hiawatha and the "wampum bird" had been noted by Schoolcraft (1839, 1856). In the Seneca version, as offered by Arthur C. Parker, the third and only surviving daughter of Hahyonhwatha is said to have seen a beautiful bird, which is described in a footnote as the magical "Ha'goks" that is sometimes called the "wampum eagle" (Parker 1916:75). The beautiful bird frightened her and she ran away. Then the warriors saw the bird and followed it, and not seeing the daughter of Hahyonhwatha the warriors trampled her to death. This version suggests that the warriors were blinded to her presence, either by the beauty of the bird or one may infer by their greed.

In a later publication Parker offered another variant of the Seneca myth. In this one the unnamed hero has an enchanted bird on his hat! The bird has the ability to bring the hero coals with which to light his pipe. This bird may be one and the same as the "wampum eagle" — a kind of eagle that is covered with wampum. Many people shoot at this bird to kill it, but only the hero with his "magic arrow" is capable of bringing down this bird (Parker 1923:32). Of note in this version is the bird-pipe relationship, and the eagle-arrow-wampum linkagem (see Figure 1). Later in this collection Parker (1923:194-195) describes the hero, later identified as "Two Feathers," launching what must be the magic arrow, but without use of a bow. This arrow kills the wampum eagle, and the validation of Two Feather's role in killing the wampum bird is that only the hero can draw the arrow out of the bird. The similarity of the "sword-in-the-stone" theme warrants further study. Important in the linkage of various elements is Parker's note, taken from a 1903 version of the tale, that Two Feathers uses smoke as a medium of purification. After exhaling the purifying smoke Two Feathers says "See, I breathe. Now Look' [and] Wampum dropped from the frost of his breath and piled up in a heap on the skin" (Parker 1923:198). The Iroquoian speaking Wawenock, an Abenaki group in Maine, speak of a sorcerer who could light his pipe and cause wampum to fall [smoke like] from his mouth (Speck 1919:9). Quite simply, smoke goes up, like arrows, and wampum falls down.

If wampum falls from the sky the legends must have the beads fall into water, since the beads derive from marine shells. The primary source for the appropriate shell was in the area surrounding Long Island Sound, where local native populations soon became major producers of the beads. Not surprisingly, in the version of the Hiawatha legend as published by Beauchamp (1892) Hiawatha gathers shells from the lake bottom. He then goes to the Mohawk town, or "castle," adorned with ornaments made from these shells. The resident "Chief" sends young men to see if the visitor is a friend. They approach Hiawatha by creeping through bushes and saw an old man stringing short eagle quills. These scouts return to the Mohawk town and report what they have seen. Then the young men are sent back to invite the old man to council (treaty), which they did, "but he neither looked up nor answered, stringing the quills as before." The request to join them at council was repeated, and ignored again.

The third time the young men asked, Hiawatha replied "When your chief wants me at a council he must send me a string like this." The quills being strung came from the wampum bird, a bird that soars very high and is rarely seen but could be called down by Hiawatha.

The chief at the Mohawk "castle" had none of these special quills with which to string a request to treaty, so he sent Hiawatha a string of partridge quills instead. Hiawatha went to the village and immediately "showed them how to make and use wampum, and then [he] proposed the League" that became the League of the Iroquois (Beauchamp 1892:63-64).

In another version of the story, more obscure in its origins, we are told that whenever the wampum bird of Hiawatha was struck by an arrow a shower of wampum would fly from its feathers, but the bird could never be shot down (Speck 1919:10). The bird-to-shell relationship appears clear in both cases and, one may expect, this relationship would occur in all early versions of the Deganawidah-Hiawatha epic. The correlated relationship which I would postulate between birds and pipes also may be traced in the Iroquois Eagle Dance (Fenton 1953).

Calumets and Wampum Belts Among the Lenape: Rituals at the Margins of Iroquois Territory

Above note was made that the calumet ritual, or at least the version used by the Five Nations Iroquois, was not part of the treaty or peace process of all the native peoples in the northeast. Similarly, wampum belts were not used in the diplomacy of all the nations surrounding the Iroquois and Huron confederacies. When William Penn (1644-1718) arrived in Pennsylvania during the fall of 1682, long after his emissaries had begun to arrange land purchases, he was eagerly awaited by the Lenape people of southeastern Pennsylvania from whom he had already begun to purchase land (see Becker 1986). The Lenape called him Miquon, the Lenape term for feather or quill. The use of the name Miquon reflected the colonist's use of feathers as writing pens, and thus their term was a form of "pun" on Penn's name. The Five Nations Iroquois referred to Penn as *Onas*, their word for feather, and *Onas* was commonly used at treaties even after Penn had left America in 1701, to refer to the governor of Pennsylvania (Du Ponceau and Fisher 1836:149).

The name *Miquon*, like *Onas*, is often seen as a simple translation on the part of the natives. However I believe that far more than a pun or simple translation was intended, and this paper explores the complex cognitive aspects of this word use. Although the Lenape did not use belts of wampum as commonly as did the Five Nations peoples, considerable quantities of loose beads are noted among the lists of goods that Penn paid for each of his numerous purchases of land from these people. Wampum also is noted for years after in the many reconfirmation treaties that verified these sales to new generations of Lenape.

As Marshall Sahlins might see the relationship between Penn and the Lenape, and particularly the more distant Five Nations, this Englishman may have been viewed as the embodiment of Hiawatha, whose legendary deeds brought peace, prosperity, and wampum to his people. Thus the arrival of Miquon, whose very name calls to mind the wampum bird, calls up visions of the transformation of bird quills to wampum. Lenape who had long left the Delaware valley, some having settled in the west as early as the 1660s, returned home to participate in the bounty being spread by this just and humane Englishman. Penn came, purchased all of the lands of the Lenape by 1701, and sailed away home to England as a legendary figure. Unlike the ill fated Capt. Cook, Penn did not return to spoil any ideas that had been developed about his sojourn among the Lenape.

Of considerable interest in helping us to relate the use of the calumet to the use of wampum are two important accounts that survive from among the Lenape, the native peoples of southeastern Pennsylvania. The first dates from 1712 and reports on a planned visit of some Lenape to the Five Nations Iroquois. The complex political relationships between the various Native American cultures operating in and around Pennsylvania at the beginning of the 18th century placed the traditionalist bands of Lenape, or those who at that time still were resident in the Delaware Valley, in a position somewhat subordinate to the Five Nations. At some point about 1701, and perhaps as a result of the Grand Peace, the Five Nations had "requested" that the Lenape come to treaty with them. Ca. 1701 the Five Nations had sent the Lenape a calumet (pipe) to be cared for and shown at future meetings, in much the same way that a wampum belt would be used at treaties! This "Calamet" pipe is described as "with a stone head, a wooden or cane shaft & feathers fixt to it like wings, with other ornaments" (Colonial Records of Pennsylvania 1852, II:545-546; cf. Fig. 3, from Moubach 1728).

Since Five Nations diplomacy was based on wampum exchange, one would expect that a belt of wampum would have been sent to these Lenape with the request to come treaty with the Five Nations. The fact that a pipe, and not a belt, was sent reflects the relatively infrequent use of wampum by the Lenape. A dozen years after this Five Nation's request had been made by the delivery of the calumet, when a group from the Schuylkil River band of Lenape led by the elders Sassoonan and Scollitchy, perhaps along with Lenape from other bands, got around to making the requested visit. These Lenape had fashioned a series of wampum belts to present to the Five Nations along with their reply. Fortunately the details of this treaty survive in the form of a "rehearsal" of the meeting. This rehearsal was made for the benefit of the members of the Provincial Council of Pennsylvania. The Lenape going up to Five Nations' territory did not wish their allies in Pennsylvania to mistake the purpose of their visit to the "Mingoes," as they called the Five Nations. The Lenape travelers arranged to meet with representatives of the Provincial Council and an interpreter at Edward ffarmer's house in White Marsh on 19 May 1712. Reichel's (1870:179) interpretation of the documents suggests that Governor Gookin attended, and inserts other "explanatory" details. At that meeting in White Marsh the Lenape told the Council members that they were taking "32 belts of Wampum of various ffigures" to the Five Nations along with the calumet (Colonial Records of Pennsylvania 1852, II:545-546).

The Lenape used the 1712 meeting with the representatives of the Provincial Council to rehearse their recitation of the speech to be delivered with the belts and strings. Thus we are provided with a valuable record of what was to be said and what belts were related to specific parts of the narrative. More significantly, the "ffigures" noted as associated with these belts appear on only four of the 32 examples, with the other belts presumably being "plain." Fortunately, drawings of the four belts with "ffigures" that were sketched into the margins of the minutes of this meeting (Provincial Record, Volume D, page 281), but not published in the Colonial Records, were identified by the late William A. Hunter. Hunter provided me with a photocopy of the original, and that serves as the basis for the illustration noted here (Figure 4). Quite important to the history of wampum is the observation that the "ffigures" on these belts turn out to be the simple diagonal lines, or slashes, that are typical of early belts (Becker In process A). Thus this record provides valuable insights into the evolution of design elements on wampum as well as an indication of the fact that a fusion in the use of wampum and of the calumet ceremony seems to occur in the territory of the Lenape. Basically, the southern frontier of the League of

the Iroquois was the boundary beyond which the use of wampum rapidly declines.

The second document relating to these interactions between the Lenape and the Five Nations derives from minutes of a Council that was held in Philadelphia on 14 June 1715 (Colonial Records 1852-53, II:599-600). Lieutenant Governor Charles Gookin met with representatives of the Lenape and the Shawnee, the latter being one of the remnant groups that survived from the dispersal of the Susquehannock confederacy.

> The Chiefs of Delaware & Schuylkil Indians coming down to visit the Govr., they mett in ye Court house at Philadelphia, Sassoonan being their head, and Opessah, ye Late Shawanois king wth. his companion attending him, & then opening ye Calamet with great Ceremony of their Rattles and songs, it was offered by Sassoonan the king to the Govr., Councill, & all others of ye English there mett, & afterwards was also offered by him to all his Indians, & then with ye same ceremony was put up again
>
> Then Sassoonan rose & spoke to the Govr. & said, that the Calamett, the bond of peace, which they had carried to all the nations round they had now brought hither; that it was a sure bond and seal of Peace amongst them and between them and us, and desired by holding up their hands, that the God of Heaven might be Witness to it, and that there might be a firm peace between them and us forever.
>
> To this the Governor made a reply, followed by Sassoonan delivering his first belt of wampum, and then he waited for a reply. The English reply and entire exchange follow the course of normal treaties involving wampum exchange. During this dialogue these delegates gave the Governor a total of three wampum belts "in behalf of all our Indians on this side of Sasquehannah ..." in addition to skins and other items (Colonial Records 1852, II:599-600).

Note that this 1715 description of the Calumet Ritual in Philadelphia takes place only 15 years after the ritual described from Mobile, Alabama. A further linkage of wampum and pipes in Pennsylvania, although far less clear, appears in the Colonial Records of Pennsylvania (VII:49) regarding a group of natives identified as "Delawares" but almost certainly Lenopi resident in Pennsylvania. These "Delawares" had sided with the French at the beginning of the French and Indian War, but remained in one of the several culturally segregated native encampment zones in the area of the Susquehanna River called Wyomink (Wyoming). The Pennsylvania Provincial Council was concerned about this "Delaware" group and sent an enquiry to them regarding their reasons for joining the French cause. Among the natives who carried the message from Philadelphia was David the Mohawk. These delegates decided that it was too dangerous for them to make the enquiry directly and asked Paxonosa (Paxinosa), then "Chief" of the Shawnee living in their own "town" at Wyomink, to "reason" with these renegades. Paxonosa reported that he delivered the request with some belts made for the purpose but:

> They would not so much as touch His belts he laid before them. They throwed them on [to] one side with their Pipes, and gave him ill Language ... (Colonial Records of PA VII:49).

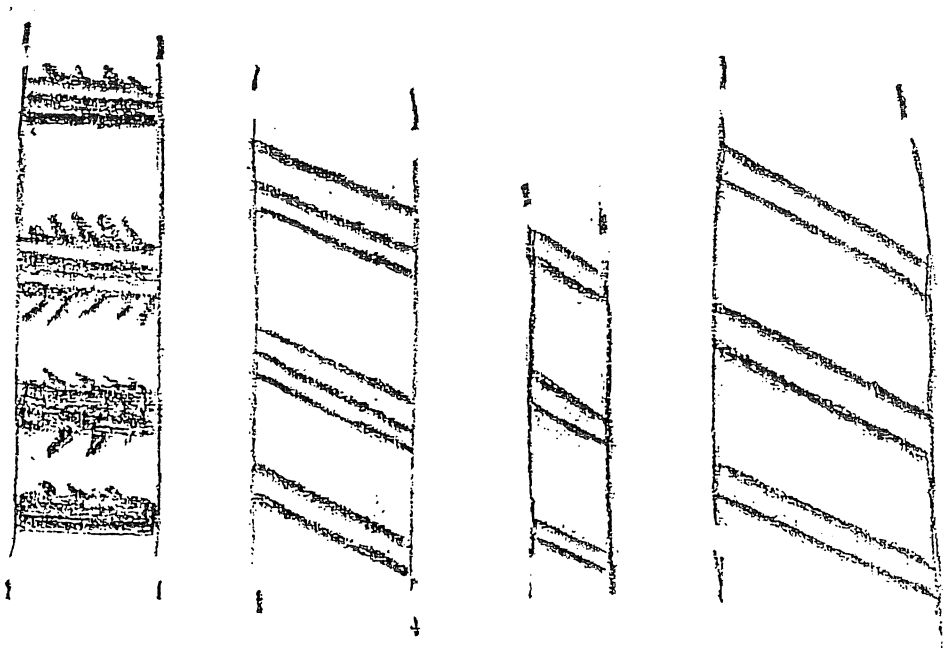

Figure 4. The four "figured" Lenape belts of 1712.

This is one of the rare cases in which pipes are mentioned at all in Lenape treaties and the full meaning is not evident. I suggest that the parties may have smoked prior to the delivery of the message from Philadelphia; a message with a request to return to the fold that the recipients clearly rejected.[4] Of interest is the English name for one of the participants in those dealings was "The Belt."

Long after the traditional Lenape bands of southeastern Pennsylvania, such as those just noted, had shifted their foraging ranges to locations west of the Delaware Valley other native immigrants into Pennsylvania provided a view of native culture that had nothing to do with the Lenape. As a young man in 1734 Teedyuscung, a Lenopi from southern New Jersey, moved into the Forks of Delaware in Pennsylvania. By the 1750s his band was living along the Susquehanna near the New York border near a number of other "refugee" groups that the Five Nations had brought into their periphery. The hostilities that led to the French and Indian War provided this particular Lenopi with the opportunity to wheel and deal on the frontier by claiming to represent these various groups and even, on occasion, to represent the Iroquois. Teedyuscung was known by the English to be unfamiliar with local diplomatic protocols, but he rapidly learned the basics, and that was sufficient for his purposes.

By the conference of July 1758, held in the State House in Philadelphia, Teedyuscung had the basics of treaty form and oratory under control, and was able to extract vast quantities of goods from Lt. Governor Denny and the colonists (Becker Ms. F). At the opening of the Philadelphia treaty Teedyuscung's speech made reference to the previous period of peace and amity between the Indians on the frontier and the Provincial Council of Pennsylvania:

> I brought the same wing with me that they used. It is yet in my hand, in order to Sweep our House (Hazard 1853:456).

The imagery uses the wing of a bird as a broom (sometimes it's a fan) that is employed to sweep clean the path, and here applied to the State House. Note that Teedyuscung calls the State House "our House" as if he were a sharing proprietor. That his Lenopi kin had been killing British colonists on the frontier only three years before when Teedyuscung was considering and alliance with the French; and that his band in the late 1730s had complained about their treatment and lied to the Provincial Council of Pennsylvania — all this was "swept away" by this oratory. The Governor replied using similar words and imagery, particularly referring to the wing used to sweep away the accumulated dirt. In this council Teedyuscung also notes the "good Tobacco and Pipe which our Grandfathers used" at earlier councils (Hazard 1853:458-459). And at the main meeting in the treaty formal presentation of belts and strigs of wampum are made. Thus feathers, in the form of a wing, smoking of the pipe, and presentation of wampum are all part of this treaty that was preliminary to a major treaty held at Easton, Pennsylvania only a few months later. The feathers-smoke-wampum triad are not unique to this treaty, but are embedded within the protocols of all Five Nations Iroquois treaties during this period, and up to the end of that century (Becker 2001a, In process A). Teedyuscung was taking his cues from the Five Nations as well as from the British, since the Lenopi and others south of New York were not commonly involved in these many aspects of treaty making that had developed earlier in the century.

The importance of feathers, birds and bird quills among native peoples living to the south of the Five Nations was recognized in the 1760s by Richard Peters. Peters was at the Treaty of Greenville at Fort Stanwix in 1768. While there he noted that Penn's name among the Five Nations Iroquois was "Onas," or [bird] quill. The importance of the association of Penn's name with the term Onas may have been more clear to Peters than is apparent in his record, which is produced below. While attending the Treaty of Greenville, the natives conferred on Peters one of the [several] names of "a celebrated warrior" of the Tuscarora, the peoples who became the Sixth Nation in the Iroquois League. The name awarded was "Tegochtias," one of the names of the warrior who had recently fought "against the Southern Indians." That Peters recognized the particular importance of this name, and could thereby understand the importance that the name Onas provided to Penn as an indication of his status, can be seen in a letter Peters wrote to Robert Vaux:

> The feathers and desicated [sic] or preserved birds, called by the Indians Tegochtias, i.e., Paroquets, were brought home by the war parties, as Trophies. The feathers decorated the Moccasins (where I had a pair presented to me), mixed with porcupine's quills, in beautifully ornamented workmanship (Peters 1825).

We may infer that the feathers and skins in question came from the now extinct Carolina parakeet, an extremely colorful bird with considerable ornamental value. Of all the spoils of war that led the Five Nations to make raids into the Carolinas the feathers of the parakeet appear to be the least known.

The Quilled Band Origins of Wampum?

The Five Nations Iroquois mythology and many other tales regarding the origins of wampum point up two probable facts of note. The elaborate woven and patterned bands (belts) of wampum, some of which were edged with porcupine quills, derived directly from the northeastern woodland tradition of porcupine quillwork. Quillwork was used to decorateon a wide range of artifacts in general use, and early belts may all have had quilled borders. Morgan (1851:365) points out that these decorations are specifically derived from porcupine quills.The British Museum Sloan Collection includes a wampum-like belt (No. 2043) measuring 720 x 43 mm that is adorned with quills that are almost certainly porcupine. This band consists of a heavy, tanned skin on which are mounted eight strips of bark or roots, averaging 4.5 mm in width. These strips are closely and evenly wrapped with quills and fastened to the skin backing. Bushnell (1906:682) describes this piece and notes that the quills are like those found in a series of 30 nested baskets.

The hypothesis that wampum belts had their origins in quillwork bands was not specifically stated by Bushnell, but had been posited by H. Ling Roth (1919), who suggested that beads replaced what he believed to be the more difficult to work quills (see also Merwin 1916, 1918). I do not believe quills are more difficult to work, and at no time have wampum belts ever attained the artistic and decorative equivalent of the multicolored quillwork bands. Roth also believed that the quills used in this art form probably came from geese, and not porcupines as correctly noted by Merwin (1918) and demonstrated to be the case on most of the known examples. Quite probably the legendary associations noted in the myths reflect the actual historical connection between bird quills used to decorate bands and the bands later woven with shell beads (wampum belts).

Wampum beads developed into a major item of exchange between 1600 and 1610. Wampum was produced at that time not simply because metal tools brought by Europeans were needed in the manufacturing process but because wampum was a useful and needed standard in an increasingly complex economic interchange system (Becker 2001a, In process A). Wampum also served as an item useful as a gift giving medium. The rapid development of the production of this currency-gift material filled a void in the developing commercial and social or socio-political relationships of eastern North America.

In discussing the evolution of political moieties out of the less complex social moieties, Becker (1975) argued that the development of a dual system, derives from, or is parallel to evolving social stratification and economic complexity. European contact obviously generated economic change among the Iroquoian people and altered their interaction patterns with neighboring cultures. This led to an intensification of existing social patterns but without effecting the development of a more complex political structure. There, we need not be concerned as to whether foreign trade generates economic growth, leading to social stratification, or if economic growth leads to foreign trade, since the Iroquoians developed neither social stratification nor economic growth. What is of interest is how the socio-economic patterns intensified in the post-contact pattern.

The arrival of Europeans in the New World during the 16th century brought goods that soon were in great demand by the native Americans (Becker n.d.). The desire for metals, cloth, etc. generated the basis of trade for furs and other domestic resources. Traditions involving meetings and exchange may have been influenced by European contact and by the resulting changes in the technological base, but the core of the behaviors continued into the 20th century and may exist in some places to this day. Until quite recently members of the Delaware culture in Oklahoma still met on an annual basis to smoke together and to exchange ponies (S. Roark-Calnek, pers. comm. 1979). Similar examples of these traditional interactions between Native American cultures abound (see Roark-Calnek 1977).

The development of wampum as a ceremonial item, as well as a medium of exchange, bridged the vital gap between traditional native social interaction patterns and related trade (commercial dealings) on a small scale in the pre-contact period, and the later extensive trade with Europeans and the correlated expanded domestic trade routes. After 1550 the more extensive and regularized trade, involving larger quantities of goods, utilized items of exchange such as wampum, cloth, etc. that were somewhat different from those used in the past. Yet the basis for exchange and interaction appears to have been modeled upon the cultural traditions and cognitive patterns that existed previously, perhaps extending back into the distant past. Whether smoking and pipe rituals, as aspects of trade, also had developed in antiquity is not clear.

An understanding of the ritual functions of wampum, quite apart from its economic worth, enables us to see that the behaviors involved in the gift-giving of wampum, with the implicit social obligations of reciprocity by the receiver, are in some ways symbolically parallel to those behaviours involved in the sharing of the calumet pipe (cf. Hall 1997). M. Foster (personal communication) suggests that the paraphernalia of the calumet ritual as a symbolic device in an elaborate greeting ritual is like the use of wampum in such rituals. My concern is with the more important cognitive components of these interactions. Both the calumet ritual and wampum exchange, and certainly other inter-cultural (and later interethnic) interactions that developed between Native American groups, derived from earlier cultural patterns also as a response to the need for increasing native solidarity in the face of threats from Europeans and their allies.

Calumet ceremonialism was one of a number of different ways in which cross cultural contacts were organized in the face of increasingly complex trade and economic exchange. The use of wampum gradually provided a means to achieve similar ends — the adjustment of traditional cultural systems to stresses caused by new interactions with cultures using different technologies. The use of wampum was a mechanism that permitted traditional cultural procedures to continue to operate, both in a cognitive sense and in a minimally altered material form. At the same time this wampum provided a means by which the Europeans could function within the greater economic sphere of the Old and New Worlds, but here centering on Native American exchange systems.

Several other examples of parallel mechanisms being developed to mediate new cultural interactions are known from North America, and numerous examples must have developed wherever complex political states began to interact with egalitarian societies, or with horticulturalists. Some examples follow.

Throughout the Pacific northwest, the traditional potlatches (Barnett 1938; Codere 1956) became amplified (more goods distributed, and ultimately large quantities of goods destroyed) as wealth from complex societies began to flow into fundamentally hunting-gathering-fish harvesting cultures. All traditional values were maintained, including the use of blankets in the system. However, the elaborate woolen blankets used in the procedure were augmented by cheap blankets sold by the Hudson's Bay Company, thus bringing outsiders into the system. Quite probably the localized trade in dentalia shells permitted greater interaction with other cultures of the north Pacific coast, thereby utilizing two items to intensify interactions on "local" and "foreign" vectors.

One might note that the presentation of items at a potlatch also obligated the recipient, should they choose to accept a gift, to reciprocate with the acceptance of the givers right to assume a new name or with recognition of higher status. Thus, the redistributive attributes of this system parallel those of the northeastern woodland zone.

Other examples from Oceania or Africa might be cited, but the reader may recognize the conceptual parallels with ease. The general concern here is with noting this cultural accommodation in this specific area, but the pattern described may serve as a model for understanding cultural adjustments of this type as a general rule.

Concluding Observations

In earlier papers (Becker 2001a, 2002) the suggestion was made that the fabrication of "collars" or belts of wampum may have been a "technology" introduced by the French missionaries to the Huron. The pseudo-weaving of the warp and weft essential to belt construction is more closely related to the weaving of cloth than it is to the working of quillwork bands. The process of "finger" weaving or producing simple long strips of "woven" string may be related. In this paper I suggest that the length, flat shape, and other features of most calumet stems are a "survival," in a ritual form, of the use of the atlatl. As a survival the calumet stem suggests a considerable ancestry for the calumet ritual, linking it with the last use of actual atlatls ca. 1000-1200 CE.

Fenton (1953:157) suggests that the use of the calumet ritual was fostered by the French in the 17th century and later as a means of facilitating diplomatic interactions. I suggest that the use of the calumet as a means of negotiating inter-cultural contacts and trade predates the arrival of the French. The very carrying of a calumet may have been a "passport" like activity meant to indicate that one comes in peace, and that trade was the goal. Use of the calumet enabled traditionally hostile peoples, or at least peoples in conflict, as a means by which they could come together and thereby facilitate the exchange of resources. Springer (1981:226) suggests that the French had little if any influence in calumet rituals, but he does note that "the Iroquois were extremely resistant to the calumet and its rituals." The "resistance" of the Five Nations to calumet ritual may have been due to the development of an entirely distinct set of rituals involving wampum exchange. Wampum thus provided the same

intertribal political and economic results. Yet, as we have seen with the Lenape-Five Nations interactions in the early part of the 18th century, the Iroquois could use a calumet in ways that complimented wampum exchange rituals.

If the French did not deliberately encourage the development of the Calumet Dance, then the basic stimulus of the economics of trade created the foundation for calumet rituals. Calumet ceremonies were exactly paralleled in many aspects to the developed wampum protocols that were central in diplomacy and trade among the Huron, Five Nations, and some of their immediate neighbors. The calumet rituals, however, were egalitarian in nature, with all parties basically smoking a pipe. Wampum, on the other hand, provided a vast range of levels of discourse as well as a shared mnemonic record of the events that transpired. The fabrication of belts and strings for presentation provided time for rehearsal of the discourse, and for consideration of the kinds of requests that would be made. Group decisions regarding the importance of each point to be made sharpened the focus of treaty narrative and enabled each belt or string to be "tailored" to the request to be made.

The association of the eagle with the wampum bird with pipes and tobacco in the calumet ritual has long been noted. Several of the points made by Fenton demonstrate that the relationship between the two rituals known as the Eagle Dance and the Calumet Dance. The Eagle Dance celebrates the capture of the eagle for its feathers. Fenton's (1953:172) equation of the Calumet Dance with the Eagle Dance of the Iroquois, and others, and his belief that the Eagle Dance derived from the Calumet Dance ca. 1670, has been confirmed by all the evidence gathered during the past half century. Springer (1981:228) summarizes data from some of the earlier authors who studied these connections.

The observation that not all calumets have elaborate feather ornamentation leads me to suggest that some cultures, or regions, used only hair or other decorative elements. Alternatively, pipes ornamented only with tufts of hair may be associated with the internal affairs moiety of the culture while pipes with wings and/or feathers may be associated with the external moiety, and thus related to trade and warfare. A survey of the surviving examples, and a plot on a cultural distribution map, might yield interesting information about cultural zones.

The "new economy" generated by European trade goods may have stimulated a further development of these rituals. Evidence definitively demonstrating that the calumet ritual is an aspect of trans-cultural revitalization among Native American groups responding to European contact has not been forthcoming. The development of wampum as a tangible medium in native diplomacy was paralleled, in areas where wampum was not available or used, by the calumet ritual. Alternatively, the calumet ritual in the pre-contact period, as indicated by the archaeological record for stone pipe bowls, became more elaborate after 1500 CE. The celebration of the calumet ritual was paralleled by development of ritualized exchanges in that limited area where the pelt trade had vastly expanded the native, as well as colonial, economies.

The calumet ritual was the equivalent of wampum exchange in the areas west of the wampum trade zone. The Calumet Dance developed during the 17th century as a mechanism for facilitating complex trade in pelts and the European goods that were given for this waste product. This ritual extended to the very center of the American Plains, facilitating the movement of pelts toward eastern market zones where Europeans were based. Ritual wampum exchange, in political as well as business negotiations between any two cultures, both reflect the expanding native economies. The need for a medium of exchange to facilitate trade with Europeans and new techniques to deal with increasingly complicated cultural interactions resulting from this extensive transatlantic commerce may be the sole generators of these aspects of culture change. As such, the development of wampum — presentation, parallel to arrow giving and calumet smoking, evolved out of the traditions native to the area and perfectly consistent with the forms which existed prior to the arrival of the Europeans.

Endnotes

1. In addition to numerous examples of calumets in the collections of the British Isles, an elaborate and well preserved "Sioux" example may be found in the Neuchâtel Museum, Switzerland (Bushnell 1908a:7). Another is in Skokloster Castle, Sweden (Becker Ms. E.), and a stunningly well preserved Cheyenne example is part of the Spangni collection in the City Museum of Reggio Emilia, Italy (Laurencich Minelli 1992:32-36, 89, fig. 3 and cover; also 1990).

2. William Turnbaugh (1979:686) suggests that the rapid expansion of the use of the Hako-type calumet may have been an aspect of widespread revitalization among Native American populations responding to European expansion into the New World. By placing this aspect of culture within the context of the model of revitalization proposed by Wallace (1956), Turnbaugh attempted to add a new dimension to Hall's important paper (1977). Turnbaugh's thesis does not hold up in any aspect, as demonstrated by Springer's (1981:226) careful refutation. Springer provides substantial evidence to support an alternate view that the calumet was a part of traditional cultural interactions in the 1600s and not something new or drastically altered. Efforts to imply that revitalization was at work fails to explore the considerable literature that recognizes the antiquity of the calumet rituals (cf. Springer 1981).

The power of Wallace's model of revitalization to encompass all kinds of change does not mean that all circumstances involving rapid change are "deliberate, organized, conscious efforts by members of a society to construct a more satisfying culture" (Wallace 1956:265). The social and economic processes that led to numerous obvious cases of revitalization, such as the Delaware Prophet movement of 1762-1765, Handsome Lake's activities from 1799-1815, and the Ghost Dance of 1888-1896 to mention a few, are all obvious cases of revitalization (Wallace 1956:264).

3. Bison or other animal hair may be part of the decorations on calumet stems. The analysis of all these elements would provide useful information. Bushnell's (1909) important review of the use of bison hair throughout the Great Plains and beyond provides a picture from which the absence of bison hair on any complex artifact such as a calumet stem would be of interest.

4. Druke's (1985:88) commentary on this meeting is difficult to decode.

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